SYNTHETIC HUMAN-DERIVED PEPTIDES AND PEPTIDOMIMETICS FOR CANCER THERAPEUTICS

SUMMARY

Resistance to tocarfilzomib and bortezomib (Velcade®) and their toxicity have raised concerns and highlight the need for new 26S proteasome inhibitors. Investigators at the NCI have developed a new class of proteasome inhibitors for which the NCI seeks licensing or co-development partners.

REFERENCE NUMBER

E-278-2015

PRODUCT TYPE

- Therapeutics

KEYWORDS

- proteasome inhibitor, ubiquitin receptor
- HPV, ovarian, prostate, gastric, breast, colorectal

COLLABORATION OPPORTUNITY

This invention is available for licensing and co-development.

CONTACT

John D. Hewes
NCI - National Cancer Institute
240-276-5515

John.Hewes@nih.gov

DESCRIPTION OF TECHNOLOGY

FDA approved 26S proteasome inhibitors, such as carfilzomib and bortezomib (Velcade®) have proven to be effective at treating hematologic cancers. However, resistance to these agents and their toxicity have raised concerns and highlight the need for new 26S proteasome inhibitors.

Investigators at the NCI Structural Biophysics Laboratory have developed a new class of proteasome inhibitors. They are hRpn2-derived peptides capable of specifically targeting the Pru domain of hRpn13. Disruption of the Rpn2/ Rpn13 interaction inhibits proteolysis by a mechanism that differs from those of the approved proteasome inhibitors.

POTENTIAL COMMERCIAL APPLICATIONS

- New class of proteasome inhibitors, targeting hRpn13 of the regulatory particle.

COMPETITIVE ADVANTAGES

- Synergistic with, and more specific than, known proteasome inhibitors.
- Alternate mechanism of action compared to approved proteasome inhibitors.

INVENTOR(S)

Kylie J. Walters (NCI), Fen Liu (NCI), and Xiuxiu Lu (NCI)

DEVELOPMENT STAGE

- Discovery (Lead Identification)

PUBLICATIONS

Lu X., et al., 2015 PLoS One. PMID: 26466095.

PATENT STATUS

- **U.S. Provisional:** US Provisional Application 62/222,530

THERAPEUTIC AREA

- Cancer/Neoplasm